According to PCWorld < [link](http://www.pcworld.com/article/2065126/the-absurdly-simple-guide-to-backing-up-your-pc.html) > “The first rule of PC Club is: Always, always back up.”

Learning the hard way…I was an administrator of a youth summer program writing a syllabus to hand out to the students for the next day. I began typing and three hours later was putting the finishing touches on the syllabus when our City Hall experience a brief disruption of electric service! The outage was quick…off and then on…but quite long enough to shut down our computers! I lost all 23 pages of the syllabus simple because I didn’t format a regular “automatic save option” on my document when I started. I now push “Ctrl+s” whenever I stop typing for any amount of time or when I leave my desk – this “saves” the document just in case something happens during its compilation.

In the past (15-20 years ago), backing up your PC (personal computer) was complicated and laborious!

I still remember going through a great deal of preparation and cost just to begin to transfer files to another location outside of the computer. It is quite different today!

|  |  |  |  |
| --- | --- | --- | --- |
|  | Here is a table demonstrating the different types of digital storage/devices for backups: | | |
|  | | | |
|  | “A modern digital computer represents data using the binary numeral system.” – “All text, numbers, pictures, audio and nearly any other form of information can be converted into a string of “bits” or binary digits each having a value of “0 or 1”” – “The most common unit of storage is the “byte” – equal to 8 “bits”. | | |
|  | | | |
|  | Sidenote: “The complete works of *Shakespeare*, about 1250 pages in print, can be stored in about 5 MB (40 million bits) with one byte per character.” | | |
|  | | | |
|  | Information gleaned from [www.ask.com](http://www.ask.com) and/or [Wikipedia](http://en.wikipedia.org/) and/or [eHow.com](http://www.ehow.com/facts) | | |
|  | Disk Storage system and device | | |
|  | | | |
|  | System/Device | Storage Capacity | Notes |
|  | 1st floppy disk | 400 kilobytes |  |
|  |  | …increased to 800k |  |
|  |  | …finally to  1.44 megabytes | Not enough space for a single MP3 file |
|  | zip drive  (introduced by Iomega in 1994)  (described as a hard drive inside a diskette case) | 750 megabytes…increased to 250MB  then to 750MB |  |
|  | external hard drives | 100 – 250GB |  |
|  | CD-DA – (Digital optical disc data storage) |  | Sony – September of 1976 |
|  | CD – (audio data (1982)) | up to 650 - 900MB |  |
|  | CD-ROM –  (Read Only Memory - data storage – early 1990s) |  |  |
|  | CD-R – (write-once audio - 1997) | 650MB |  |
|  | CD-RW – (rewritable) |  |  |
|  | VCD – (video) |  |  |
|  | \*”By 2007, 200 billion CDs had been sold worldwide. “…with the invention of other forms of digital distribution and storage (downloading and flash drives) CD sales have dropped 50% from their peak in 2000” < [link](http://answers.yahoo.com/question/index?qid=20120322072708AA5SZtp) > | | |
|  | Flash drives  (also called thumb drives) – connected using a USB  (Universal Serial Bus) | Began with 8MB  (then doubled 16, 32, etc.)  (1-265GB storage capacity) |  |
|  | Secure Digital High-Capacity (DSHC) Cards | 32GB |  |
|  | DVD – (digital video discs) | 8.5 GB (dual layer) |  |
|  | Blu-ray discs –  (primarily movies, video games and computer software) | 25GB  (5 times the amount of a DVD)  (Future plans include 100 to 200GB) |  |
|  | Another Note: “The time taken to access a given byte of information stored on a hard disk is typically a few thousandths of a second, or milliseconds. By contrast, the time taken to access a given byte of information stored in random-access memory is measured in billionths of a second, or nanoseconds.” | | |

Frequent backups will save you a lot of worry (that your data is not current), sorrow (when you have lost vital information or work), and time (you will have what you “had” easily and quickly). Some of the most common backup systems are external hard drives (they plug into a USB port), flash drives and online services. “The best option for you depends on your budget, type of back up and amount of data you have.” < [link](http://www.ehow.com/list_5770321_ways-backup-computer.html) >

1) Internal/external hard drives – The best solution to a TOTAL backup of a personal computer is to use an internal hard drive because whatever you save on the primary drive is backed up on the backup drive (called “mirroring”). Caution: Installing an internal hard drive and setting it up for “mirroring” is a more complex process than any of the other options. This arrangement is not entirely “safe” as any damage that might occur to the computer will probably affect the primary and the backup drives.

2) Flash drives are good for quick file transfers, are portable and require no setup; but, the only drawback is the limited capacity.

3) On-line services are considered “off-site” and best way to eliminate the risk of local hazards (like fire, flood and theft) but they depend on a third-party to keep the data and are slow to upload.

A 4th option might be the most secure: “create a system image and a recovery CD/flash drive on an external hard drive then create a backup of your backups to an online service. < [link](http://www.pcworld.com/article/2065126/the-absurdly-simple-guide-to-backing-up-your-pc.html) >

Knowing “why” and “how” you should backup is almost as important as “what” you should backup! But, I will save that for another page in this wiki.